



364789

Wisconsin Department of Natural Resources  
Superfund Site Assessment  
Preliminary Assessment/Screening Site Investigation  
**HEALTH AND SAFETY PLAN**

**Site Name:** Hartland Well #3

**U.S. EPA ID#:** WIN 000510360

**Location:** 570 Progress Drive, Hartland Wisconsin

**Directions to Site:** From the WDNR Waukesha Service Center: Go northwest on NW Barstow Street toward East St. Paul Avenue, turn right at East St. Paul Avenue, after 2.0 mile, turn left onto Highway 94 West, after 8.2 mile, exit to Highway 83, go north on Highway 83 for 3.0 miles to Cardinal Lane, turn right on Cardinal Lane and travel 0.3 miles to Progress Drive, turn left on Progress Drive to the facility entrance (east side of Progress Drive). The approximate facility address is 570 Progress Drive (Mapquest.com).

**Dates of Investigation:** Drilling anticipated week of November 2nd 2009 and groundwater sampling week of November 9<sup>th</sup> 2009.

**Project Manager:** Mark Drews, 141 NW Barstow St., Room 180, Waukesha, WI 53188, 262-574-2146

**Field Support Group:** John Krahling \_\_\_\_\_  
Dave Volkert \_\_\_\_\_  
Mark Drews \_\_\_\_\_  
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Nancy Ryan \_\_\_\_\_  
John Feeney \_\_\_\_\_  
Jim Delwiche \_\_\_\_\_  
John Hnat \_\_\_\_\_  
Tom Wentland \_\_\_\_\_  
Pam Mylotta \_\_\_\_\_

**Reviewed and Approved by:** \_\_\_\_\_

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## **ANTICIPATE:**

### **A. Objective**

This plan was developed to help protect the health and safety of all DNR personnel investigating potentially contaminated sites. The primary purpose of this health and safety plan is to help site workers recognize and evaluate the chemical, physical, and biological hazards they may potentially encounter and implement controls to minimize the risks of these hazards.

### **B. Facility Description and History**

The facility is identified as an active municipal well located in Hartland, Wisconsin. The facility does not have a specific address, only a legal description: LOT 3 CERT SERV 8510 VOL 74/313 2.066 AC PT SW¼, Sec. 3 T.7 N R.18 E. The facility is located approximately 500 feet north of the intersection of Cardinal Lane and Progress Drive in Hartland, Waukesha County, Wisconsin. The approximate address of the site is 570 Progress Drive.

The facility contains one parcel. The property is square shaped and is 300 by 300 feet which is 2.07 acres in size and is not fenced. The area around the facility slopes to the south toward the Bark River. The geographic coordinates of the site are 43° 5' 42.8" North latitude and 88° 21' 19.0" West longitude. The GIS WTM coordinates for the site are 653852 and 292702. Zoning in the area is manufacturing mercantile.

The 2 acre parcel property has a concrete block construction single-story building in the center of the parcel. An asphalt parking lot is located on the northern portion of the property. The building structure houses the equipment for the municipal well (refer to Attachment 1 Facility Map).

### **C. Directions to Facility and Facility Access**

From the WDNR Waukesha Service Center: Go northwest on NW Barstow Street toward East St. Paul Avenue, turn right at East St. Paul Avenue, after 2.0 mile, turn left onto Highway 94 West, after 8.2 mile, exit to Highway 83, go north on Highway 83 for 3.0 miles to Cardinal Lane, turn right on Cardinal Lane and travel 0.3 miles to Progress Drive, turn left on Progress Drive to the facility entrance (east side of Progress Drive). The approximate facility address is 570 Progress Drive.

Drilling will occur in the rights-of-way along Progress Drive and Industrial Drive. Walking and vehicle access to the actual well drilling locations will be available from Progress Drive and Industrial Drive. Walking and vehicle access will be available to the groundwater monitoring well and piezometer locations from Cardinal Lane, Progress Drive and Industrial Drive. Refer to Attachment 1 for a map showing the facility and work zones.

## RECOGNIZE AND EVALUATE

### D. Description of Work,

Site investigation activities will include the construction of three monitoring wells and three piezometers northwest of the facility property. Drilling will be accomplished by hollow-stem auger technique. Groundwater samples will be collected from: the newly installed monitoring wells and piezometers, several existing monitor wells and piezometers on and off the property, and the facility water supply well. Refer to Figure 3 in the Hartland Well #3 SSI Sampling Plan.

Specific activities will include the collection of up to 17 groundwater samples and 7 soil samples.

### E. Work Assignments and Training/Medical Exam Confirmation

All personnel working on site shall have completed, as required, a minimum of 24 hours of health and safety training plus 1 day of supervised in-field training or 40 hours of health and safety training plus 3 days of supervised in-field training. Annual refresher training will also be completed as required.

John Krahling            Hazardous Materials Safety Training- 40 hrs  
                                 Hazardous Materials Safety Refresher – 8 hrs  
                                 Hazardous Material Sampling  
                                 Baseline Medical Exam

John will serve as the sample custodian for the project and collect soil samples. He will specifically label, package and ship all groundwater and soil samples collected

Mark Drews            Hazardous Materials Safety Training- 40 hrs  
                                 Hazardous Materials Safety Refresher – 8 hrs  
                                 Hazardous Material Sampling  
                                 Baseline Medical Exam

Mark will serve as project manager, monitor collection of water and soil samples, instruct driller and other contractors for the project, and monitor data documentation activities.

Dave Volkert           Hazardous Materials Safety Training- 40 hrs  
                                 Hazardous Materials Safety Refresher – 8 hrs  
                                 Hazardous Material Sampling  
                                 Baseline Medical Exam

Dave will collect groundwater samples for the project.

John Feeney            Hazardous Materials Safety Training- 40 hrs  
                                 Hazardous Materials Safety Refresher – 8 hrs  
                                 Hazardous Material Sampling  
                                 Baseline Medical Exam

John will collect groundwater samples for the project.

Margaret Brunette    Hazardous Materials Safety Training- 40 hrs  
                                 Hazardous Materials Safety Refresher – 8 hrs

Hazardous Material Sampling  
Baseline Medical Exam

Margaret will also serve as a sample custodian for project. She will prepare and track sample documentation using Forms II Lite software, and assist with labeling, packaging and shipping all groundwater and soil samples collected.

Tom Wentland        Hazardous Materials Safety Training- 40 hrs  
                         Hazardous Materials Safety Refresher – 8 hrs  
                         Hazardous Material Sampling  
                         Baseline Medical Exam

Tom will collect groundwater samples for the project.

Nancy Ryan        Hazardous Materials Safety Training- 40 hrs  
                         Hazardous Materials Safety Refresher – 8 hrs  
                         Hazardous Material Sampling  
                         Baseline Medical Exam

Nancy will filter and preserve groundwater and water supply samples for the project.

Jim Delwiche       Hazardous Materials Safety Training- 40 hrs  
                         Hazardous Materials Safety Refresher – 8 hrs  
                         Hazardous Material Sampling  
                         Baseline Medical Exam

Jim will collect groundwater samples for the project and conduct ambient air monitoring

John Hnat        Hazardous Materials Safety Training- 40 hrs  
                         Hazardous Materials Safety Refresher – 8 hrs  
                         Hazardous Material Sampling  
                         Baseline Medical Exam

John will collect groundwater samples for the project.

Pam Mylotta       Hazardous Materials Safety Training- 40 hrs  
                         Hazardous Materials Safety Refresher – 8 hrs  
                         Hazardous Material Sampling  
                         Baseline Medical Exam

Pam will collect groundwater samples for the project.

F. Known or Potential Hazards and Risk Analysis

**Attachment 2**, Risk Analysis Work Sheets for each task has been completed and are included with this health and safety plan. The following is a list of known or suspected chemicals anticipated to be encountered on site.

Chemical:

Soil :  
Trichloroethene

Groundwater:  
Trichloroethene

Surface soils in the vicinity of the soil and groundwater sample locations are anticipated to have low to diminimous concentrations of contaminants.

Groundwater samples collected from shallow monitor wells and water supply wells are anticipated to have low levels of trichloroethene, and non-detect concentrations of PCBs, pesticides and metals. The samples collected from the deep well ports of the new piezometers will likely have similar concentrations of the above compounds and metals. Information regarding chemical preservatives can be found in Section I.

Physical:

Physical hazards anticipated to be present at the site during sampling include stress, noise, cold or heat stress and safety hazards (slips, trips and falls). Typical slip, trip, and fall hazards exist on-site. A reconnaissance inspection prior to the sampling event will help identify potential physical hazards. Refer to **Attachment 3** for heat and cold stress information.

All proper lifting techniques will be used for handling decontamination water drums, groundwater bailing drums, soil drilling spoil drums, and coolers which contain ice and packaged samples for analysis.

Biological:

Potential biological hazards may include poison ivy, ticks, dogs, or snakes.

G. Air Monitoring

Ambient air will be monitored while personnel are in the exclusion zone utilizing an OVM photoionization detector (PID). John Krahling will monitor the ambient air during the soil sampling field event. Jim Delwiche will monitor the ambient air during the monitoring well sampling field event. The unit will be equipped with a 10.6 eV lamp, which will detect trichloroethylene detected previously on site. Vapor detection is in parts per million (PPM) and is referenced to a calibration standard. Detections of chemicals by the PID are not chemical specific.

**CONTROL**

H. Selection of Personal Protective Equipment and Action Levels

The level of protection required for all personnel entering the exclusion zone shall be Level D. All personnel will wear a Tyvek coverall, safety boots, and latex gloves. The need for a respirator is not anticipated on site.

## I. Facility Control Procedures

The risks involved in conducting this site investigation are considered minimal. Nevertheless, a three-zone system will be used to limit the potential of spreading contamination. These zones include 1) the exclusion zone, 2) the decontamination zone, and 3) the support/clean zone. A map of the site with these designated work zones is in **Attachment 1**.

### Soil Sampling

The exclusion zone will be a zone 20 feet in diameter surrounding the individual soil sampling location. The decontamination zone will be a zone 10 feet in diameter surrounding the exclusion zone and will be an area where Tyveks, booties and latex gloves are removed and discarded in a trash bag. The clean zone (Support Zone) will be the area located on the northeast corner of the Hartland Well #3 property (NE corner of parking lot). The exclusion zone will no longer apply once the samples have been containerized.

Soil samples will be collected into containers in the exclusion zone and then handed to the sample custodian in the decontamination zone. The sample custodian will then label and pack the samples for shipment in the clean zone. An area on the northeast corner of the Hartland Well #3 property (parking lot in the clean zone) will be used by Department staff for labeling and packing samples.

### Groundwater Sampling

The exclusion zone will be a zone 20 feet in diameter surrounding the individual piezometer/monitoring well being sampled. The decontamination zone will be a zone 10 feet in diameter surrounding the exclusion zone and will be an area where Tyveks, booties and latex gloves are removed and discarded in a trash bag. The clean zone (Support Zone) will be the area located on the northeast corner of the Hartland Well #3 property (NE corner of parking lot). The exclusion zone will no longer apply once the samples have been containerized and the well has been closed.

Groundwater samples from the piezometers/monitoring wells and water supplies will be collected into containers in the exclusion zone and then handed to the sample custodian in the decontamination zone. The sample custodian and Department staff will then label and pack the samples for shipment in the clean zone at an area on the northeast corner of the Hartland Well #3 property (parking lot in the clean zone) or at the Waukesha Service facility.

## J. Decontamination Procedures

All sampling equipment will be decontaminated according to procedures outlined in the site-specific sampling plan.

Site personnel will decontaminate according to the following procedures:

All Tyvek coveralls, latex gloves and booties will be disposed of in a trash bag before leaving the decontamination area. Hands and other exposed skin areas will be washed as soon as possible. Hands and faces must be washed before eating.

#### K. Spill Containment and Investigative Waste

Preservatives for aqueous samples include hydrochloric acid, nitric acid, and sodium hydroxide. Material Safety Data Sheets for these preservatives and all other chemical products used on site are in a folder one of the field vehicles. (Methanol preservation for VOC samples sent to CLP labs is not anticipated; however an MSDS for methanol for the preservation of soils is also in the van.) Spill containment kits for acids and bases are available in the sampling van. Absorbent material such as vermiculite will also be available for chemical spills.

Investigative derived wastes will consist of disposable Tyvek coveralls, aprons, disposable gloves, boot covers, decontamination waters, and purge waters. All disposable personal protective equipment will be disposed of in plastic garbage bags and disposed of at DNR offices. Disposable personal protective equipment that has come in contact with heavily contaminated media or potentially hazardous material, however, will be containerized on site along with decontamination waters, purge waters and soil cuttings until they are properly transported to and disposed of at a licensed facility.

#### L. Standard Work Practices

These initial procedures will be performed before any site work begins:

- The project manager will brief the field support team regarding health and safety concerns associated with the site and confirm that all workers have read and understood this health and safety plan,
- All site workers will be shown how to use the mobile telephones in the sampling vans or available cellular phones,
- A vehicle (with all emergency information, Attachment 5) will be designated for emergency use,
- Prevailing wind direction will be determined,
- Air monitoring equipment will be calibrated up wind and off site, and
- The exclusion, contamination reduction, and support/clean zones will be delineated.

The following standard work practices shall be adhered to at all times:

- No eating, drinking, smoking, or applying of cosmetics or personal hygiene products shall be permitted on site (drinking of water, etc., will be allowed off site),
- No ignition sources shall be permitted on site,
- The "buddy system" shall be in effect at all times in the exclusion zone,
- No one shall enter a confined space,
- No one shall enter areas that require the use of PPE Levels A or B,
- Gloves shall be worn until sample containers are thoroughly decontaminated,
- Work shall be restricted to daylight hours,
- Site work will cease during severe weather conditions, including when thunder and lightning are present,
- Air monitoring shall occur when personnel are in the exclusion zone, and
- Eye protection and gloves shall be worn while handling chemical preservatives.



M. Emergency Information

All emergency information specific to this site is in **Attachment 5**.

N. Check List of Safety Equipment and Supplies

Below is a checklist of safety equipment and related supplies:

Safety Equipment and Supplies:

- Fire extinguisher
- First-aid kit
- "Strip" thermometers
- Air monitoring instrument (PID) and calibration gas
- Portable eye/face wash with sterile solutions
- Two-way communication system (walkie-talkies)
- Material Safety Data Sheets

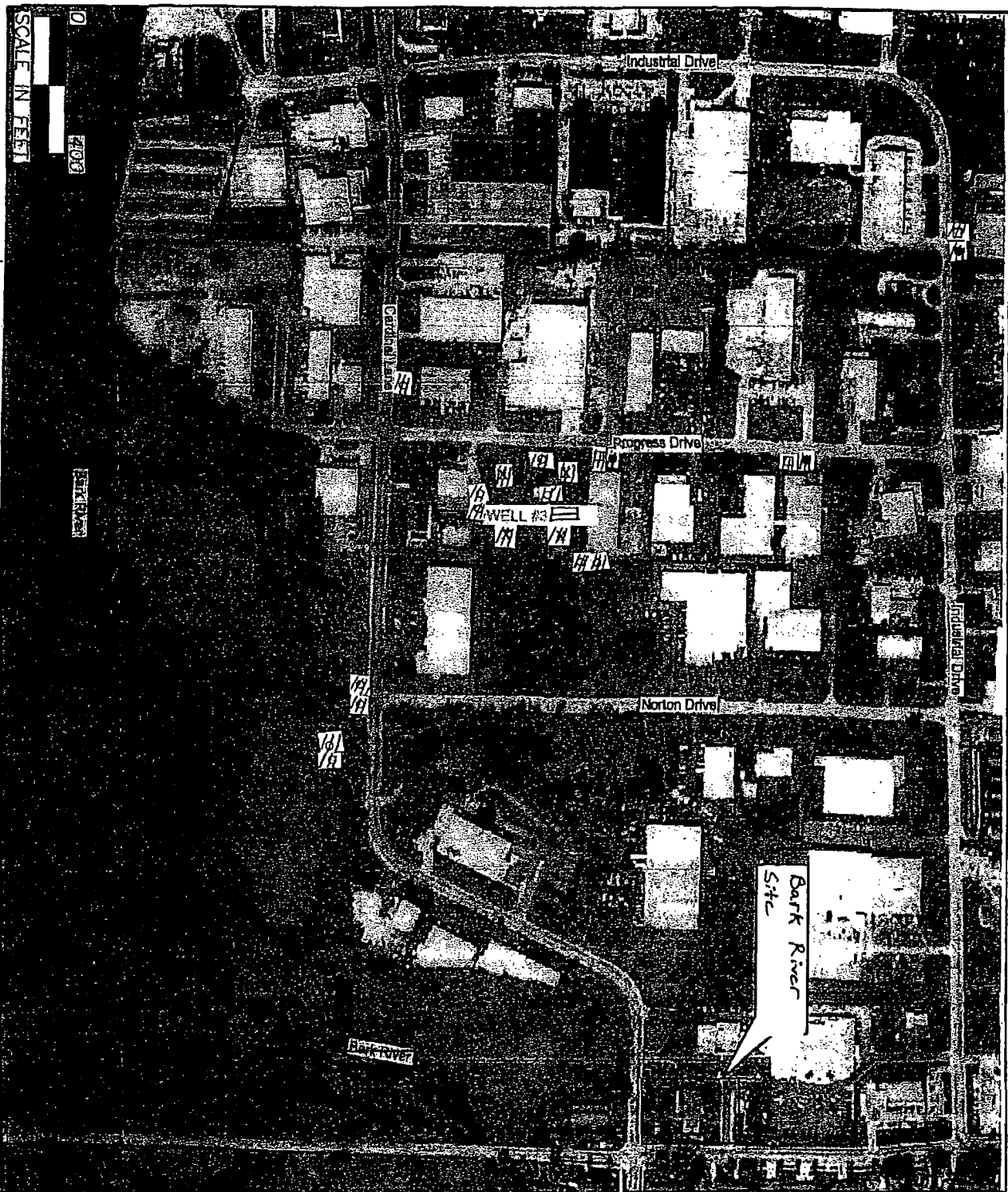
Personal Protective Equipment and Supplies:

- Air purifying respirators and appropriate canisters
- Hard hats
- Ear plugs or muffs
- Tyvek coveralls, suits, aprons, sleeve covers, boot covers
- Outer gloves (neoprene or other suitable material)
- Inner disposable gloves
- Safety boots (washable with steel toes/shanks)
- Eye protection (safety goggles or face shields)
- Duct tape
- Drinking water or "sports drinks" and vessels
- Hand and face soap, tap water, paper towels

Decontamination Supplies:

- Alconox or equivalent
- Wash tubs
- Carboys of tap water
- Carboys of contaminant-free distilled water
- Hudson sprayer for contaminant-free distilled water
- Paper towels
- Trash bags Barrels/buckets for investigative waste

**ATTACHMENT 1**  
**Map of Facility with Designated Work Zones**  
(See "Site Control Procedures", Section I of this Template)



- Proposed Monitoring Well, Groundwater and Soil Sample Location
- Proposed Piezometer, and Groundwater Sample Location
- Proposed Groundwater Sample
- x Proposed Soil Sample
- /// Exclusion and Decontamination Zone

□ Support Zone Area

# HARTLAND WELL #3 SITE HARTLAND, WISCONSIN

AERIAL PHOTO MAP

Prepared By:

Wisconsin Dept. of Nat. Resources

FILE:

DATE: JUNE 2008

FIGURE: 3

## **ATTACHMENT 2**

### **Risk Analysis**

(Information regarding risk analysis is in the R&R H&S Handbook, Chapter 5 beginning on page 3. Risk Analysis Work Sheets are on pages 6-8.)

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#### *Risk Analysis*

The purpose of risk analysis is to identify conditions that may pose immediate danger to life or health (IDLH) or other conditions that may cause death or serious harm to staff at a work site. If such conditions are noted, they need to be addressed in appropriate sections of the site safety plan. Site conditions need to be reviewed to determine if any real or potential physical, biological or chemical hazards exist at the site before entering the site. Below we have analyzed risks under three categories: Physical hazards, biological hazards and chemical hazards.

#### *Physical Hazard*

	Yes	No
Will the site activity at the time it is performed result in stress?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Is there a potential for a noise exposure in excess of 90 dBA?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Will site activity be performed in extreme temperature (> 70°F and < 40°F)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Will site activity be performed in windy conditions? (wind in excess of 10 mph)	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Will site activity be performed in severe weather? (rain or lightening)	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Will site activity require lifting of heavy objects (> 30 lbs)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Will site activity require repetitive twisting hand movements?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Will the work activity require repetitive elbow and shoulder movement?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Will the site activity require arms outstretched or elbows high?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Is there a potential for site workers to be struck by moving objects?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Will site activity include excessive physical effort (over exertion)	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Will site activity be performed on platforms or at elevated heights?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Will site activity be performed in area with an increase potential for slip, trip or fall?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Will site activity be performed between moving or stationary objects?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Will work activity be performed in Level 1 confined space?	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Department employees are forbidden to enter level 2 confined space

\* If Yes to any of these questions please refer to Chapter 4 for appropriate risk evaluation and control alternatives.

***Biological Hazard***

	Yes	No
Do you know or suspect the presence of blood-borne pathogens and infections (Hepatitis A & B, HIV/AIDS)	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Do you know or suspect the presence of blastomycosis causing fungus on site?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Is there potential for sharp rusty objects at work site (Is this addressed better under the medical monitoring?)	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Do you know or suspect the presence of poisonous ivy, sumac or other poisonous plants at work site?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Do you know or suspect the presence of poisonous snakes at the worksite?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Do you know or suspect the presence of dangerous spiders and insects (including ticks)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>

**\* If yes to any of these questions please refer to Chapter 4 for the appropriate risk evaluation and control alternatives.**

***Chemical Hazard***

	Yes	No
Are there any known or suspected containers/drums?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Are there any known or suspected vapor clouds?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Are there any known or suspected dead or stressed animals or vegetation?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Are there any known or suspected staining of surfaces or soils?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Are there any known or suspected sheens on water other clue to the presence of chemicals?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Are there any known or suspected manmade or naturally occurring pathways including storm or sanitary sewers, culverts, electrical race ways, gas pipes, telephone wires, cables, etc.?	<input checked="" type="checkbox"/>	<input type="checkbox"/>

**\* If the answer is "YES" to any of the above questions, complete Table 1 and quantify concentration.**

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Table 1

	Known or suspected substances				
Waste Category (quantity and concentration) Solid <u>Liquid</u> Gas Multiphase	Trichloroethylene (TCE)				
Medium of Contamination Drinking water (private or <u>municipal</u> ) <u>Groundwater</u> Surface Water Soils Air	TCE present in groundwater on and off site.				
Physical Properties <u>Soluble</u> Infections Flammability Ignitable (Ignition point) Highly volatile (vapor pressure) Explosive	Harmful if ingested or inhaled.				
Chemical Hazards <u>Toxicity</u> Corrosivity (acids/bases, pH) Reactivity <u>Combustibility</u> (flammability explosivity ignitability) Radioactivity	Potential for vapor or free product accumulation of TCE in utility trenches.				

### INSF — Insufficient Data

If you entered INSF to any of the required data you must delineate the Work Zone as exclusion zone until further characterization is made.

## ATTACHMENT 3

### Heat Stress and/or Cold Stress Information

**Heat Stress:** (See Table 2.2, Chapter 2, page 8, WDNR R&R H&S Handbook for Heat Index/Relative Humidity Chart.)

The protective clothing will increase the potential for **heat rash, heat cramps, heat exhaustion, and heat stroke**. The symptoms for each disorder are listed below:

1. **Heat rash** is caused by continuous exposure to heat and humid air and aggravated by chafing clothes. It decreases the ability to tolerate heat as well as being a nuisance.
2. **Heat cramps** are caused by profuse perspiration with inadequate fluid intake and chemical replacement (especially salts). Signs: muscle spasm and pain in the extremities and abdomen. Muscles fatigued from work are usually most susceptible to cramps.
3. **Heat exhaustion** is caused by increased stress on various organs to meet increased demands to cool the body. Signs: shallow breathing; pale, moist skin; profuse sweating; dizziness and lassitude.
4. **Heat stroke** is the most extreme form of heat stress. The body must be cooled immediately to prevent severe injury and/or death. Signs: red, hot, dry skin; no perspiration; nausea; dizziness and confusion; strong, rapid pulse; coma. Medical help must be obtained immediately.

#### **Heat Stress Monitoring:**

For monitoring the body's recuperative ability to excess heat, one or both of the following techniques should be used as a screening mechanism. Monitoring of personnel wearing protective clothing should commence when the ambient temperature is 70 degrees Fahrenheit (F) or above. Frequency of monitoring should increase as ambient temperature increases or if slow recovery rates are indicated. When temperatures exceed 80 degrees F workers must be monitored for heat stress after every work period.

1. **Heart rate (HR)** should be measured by the radial pulse for 30 seconds as early as possible in the resting period. The HR at the beginning of the rest period should not exceed 110 beats per minute. If the HR is higher, the next work period should be shortened by 10 minutes (or 33%), while the length of the rest period stays the same. If the HR is 100 beats per minute at the beginning of the next rest period, the following work cycle should be shortened by 33%.
2. **Body temperature** should be measured orally with a clinical thermometer (or forehead strip thermometer) as early as possible in the resting period. Oral temperature (OT) at the beginning of the rest period should not exceed 99 degrees F. If it does, the next work period should be shortened by 10 minutes (or 33%), while the length of the rest period stays the same. However, if the OT exceeds 99.7 degrees F at the beginning of the next period, the following work cycle should be further shortened by 33%. OT should be measured again at the end of the rest period to make sure that it has dropped below 99 degrees Fahrenheit.



The following steps will be taken to reduce the potential for heat stress if temperature extremes are reached:

1. Gatorade will be available as a source of electrolytes. Water will also be available. Personnel should be sure that they have decontaminated their hands and faces prior to consuming liquids. The liquids will be kept in a cooler in the support zone.
2. For temperatures between 70 and 90 degrees F a minimum of one ten minute rest break for each hour work period is planned. For temperatures exceeding 90 degrees F the planned rest break will be increased to 15 minutes. Monitoring for heat stress will be performed after each work period when temperatures exceed 80 degrees F with rest periods being modified as necessary,
3. Shade will be provided and an air conditioned car will be available. When possible, overheated personnel will cool down in the shade prior to entering an air conditioned car.
4. The team members will use the buddy system while working. They should report any potential symptoms immediately to their partner.

#### **Cold Stress:**

Although samplers may not be exposed to extreme cold conditions for prolonged periods, there are several different kinds of cold injuries which can occur, even at temperatures above freezing. This section describes exposure conditions which may cause cold injuries, and methods to prevent or care for such injuries.

#### **Local Cold Injuries**

**Chilblains** can result from prolonged exposures of bare skin to temperatures in the low sixties or below. The injury usually affects the extremities as a chronic injury of the skin and peripheral capillary circulation. Protecting the skin against exposure to cold for prolonged periods is the method for prevention and for treatment of chilblains.

**Immersion foot** results from wet cooling of the extremities. Although more common in wet feet exposed over hours or days at temperatures slightly above freezing, it can occur at higher temperatures if wet feet are exposed to cooling over prolonged periods. Prevention depends upon dry shoes and socks, and limited exposures with wet feet. Severe exposures will require emergency treatment.

**Frostbite** can affect hands, feet, ears and exposed parts of the face, and the severity of the frostbite can range from incipient frostbite, to superficial, to deep frostbite. Incipient frostbite, or frostnip, appears as a sudden blanching or whiteness of the skin, and often is not noticed by the person affected because it comes on slowly and is painless. If identified early, incipient frostbite can be treated effectively by warm hands or breath or by holding the nipped fingers in the armpits. No type of frostbite should be rubbed, and snow should not be used to rub frostbite.

Superficial frostbite causes the skin to have a white, waxy appearance and firm touch, with the tissue beneath soft and resilient. Treatment is protection from the cold and steady and careful re-warming of the frostbitten area. Do not rub any frostbitten area.

Deep frostbite usually involves the hands and feet, and is an extremely serious injury. Tissues are pale, cold, and solid, and emergency medical treatment is urgent. The injured person must be kept dry, given external warming, and watched to see if cardiopulmonary resuscitation is necessary.

### **Systemic Hypothermia**

Severe and general body cooling, known as systemic hypothermia, can occur at temperatures well above freezing by exposure to low or rapidly dropping temperatures, or cold moisture, or to snow and ice. Fatigue, exertion, and hunger are contributing factors.

Generalized body cooling can progress through five stages: Shivering; apathy, sleepiness, listlessness, and indifference; unconsciousness, with slow respiratory rate and very slow pulse rate; freezing of the extremities; and death. Sustained shivering begins when the body core temperature falls below 95 degrees Fahrenheit. With continued cooling there will be stumbling, fumbling, clumsiness, slow reactions, mental confusion, and difficulty in speaking. If the cold conditions are extremely severe, death may occur within two hours of the first symptoms. Emergency treatment of hypothermia requires moving the person out of the wind, replacing wet clothing and providing external heat in any way possible, because the person is unable to generate sufficient body heat. Warm liquids and nourishing food should be provided if the person is conscious. However, since hypothermia is such a severe emergency, emergency medical treatment is needed promptly.

**Wind Chill:** (The Wind Chill Factor Table in the R&R H&S Handbook is not current. A revised table can be obtained electronically.)

<http://www.usatoday.com/weather/winter/windchill/wind-chill-chart.htm>

The two important factors which contribute to cold injuries are the temperature of the environment and the velocity of the wind. Thermal conductivity of the environment is the mechanism that allows for the effects of the extreme cold. The most common conductors of cold to samplers are moisture, such as wet hands, and metal, such as ladders and railings. Still air is a very poor conductor, but increased velocity increases the wind chill factor. Sampling operations should not generally be conducted when the wind chill temperature is below -20 degrees Fahrenheit.

## **ATTACHMENT 4**

### **Observation Note Sheet**

The Project Manager or other site workers may use this sheet to note any observations made related to health and safety. For example, in extreme weather, work periods may be shortened to protect workers from the hazards of heat and cold. You may record the duration of work periods here. In cases of medical concerns or emergencies, health care professionals may find information, such as the person's body temperature, or other observed conditions, helpful. This sheet should not take the place of filing an incident report or a Workman's Compensation claim, but information recorded here may be useful in remembering events at a work site.

## ATTACHMENT 5

### Map with Directions to the Site with Highlighted Route to the Hospital And Emergency Information

#### Nearest Hospital:

Oconomowoc Memorial Hospital  
791 Summit Ave.  
Oconomowoc, WI 53066  
**262-569-9400**      Driving Directions: **262-569-9400**

#### Fire/Rescue/Police: Village of Hartland

**911 Emergency**  
262-367-2600 Non-Emergency

#### Complete Street Address of Site:

570 Progress Drive, Hartland

#### Mobile/Cell Phone Number at Site:

Escape (414) 588-5119  
Ranger (414) 750-8370

#### Driving Directions to the Hospital:      (MAP ATTACHED)

The Hartland Well #3 facility is located just north of the intersection of Progress Drive and Cardinal Lane in Hartland, Wisconsin. From the facility, go south on **Progress Drive**. Turn right onto **Cardinal Lane**. Go west for approximately 0.3 miles. Turn right on **WI-83** for 0.9 miles. Turn Left onto **WI-16 W** for approximately 6.4 miles. Turn left onto **S. Lapham St.** for 0.3 mile. Turn right at **E. High Street** for 0.1 mile. Finally, turn left at **E Summit Ave.** for 0.2 mile. Oconomowoc Memorial Hospital is on the right.

#### Poison Control Center:

800-222-1222

Chemtrec:      (800) 4249300

MED-TOX:      (501) 370-8203



Sorry! When printing directly from the browser your directions or map may not print correctly. For best results, try clicking the Printer-Friendly button.

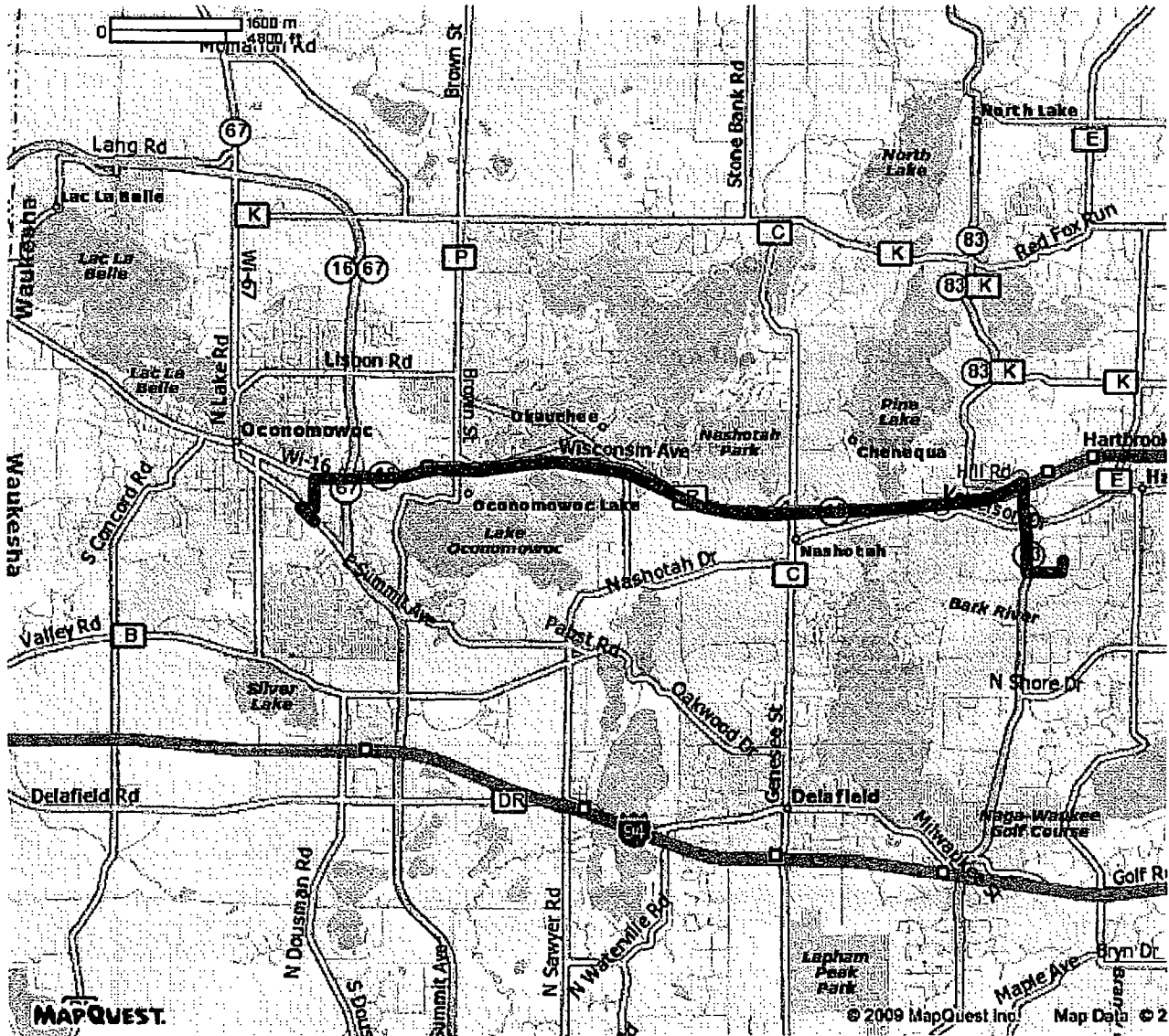


**Starting Location**  
530 Progress Dr  
Hartland, WI 53029-2304



**Ending Location**  
791 Summit Ave  
Oconomowoc, WI 53066-3844

Total Travel Estimates: 12 minutes / 8.25 miles Fuel Cost: [Calculate](#)



**530 Progress Dr**

Hartland, WI 53029-2304



**Directions from A to B:**



1: Start out going **SOUTH** on **PROGRESS DR** toward **CARDINAL LN.**

0.1 mi



2: Turn **RIGHT** onto **CARDINAL LN.**

0.3 mi



3: Turn **RIGHT** onto **WI-83.**

0.9 mi



4: Merge onto **WI-16 W** via the ramp on the **LEFT** toward **OCONOMOWOC.**

6.1 mi



5: Stay **STRAIGHT** to go onto **WI-16/WI-67/E WISCONSIN AVE.**

0.3 mi



6: Turn **LEFT** onto **S LAPHAM ST.**

0.3 mi



7: Turn **RIGHT** onto **E HIGH ST.**

0.1 mi



8: Turn **LEFT** onto **E SUMMIT AVE.**

0.2 mi



9: **791 SUMMIT AVE** is on the **RIGHT.**

0.0 mi



**791 Summit Ave**

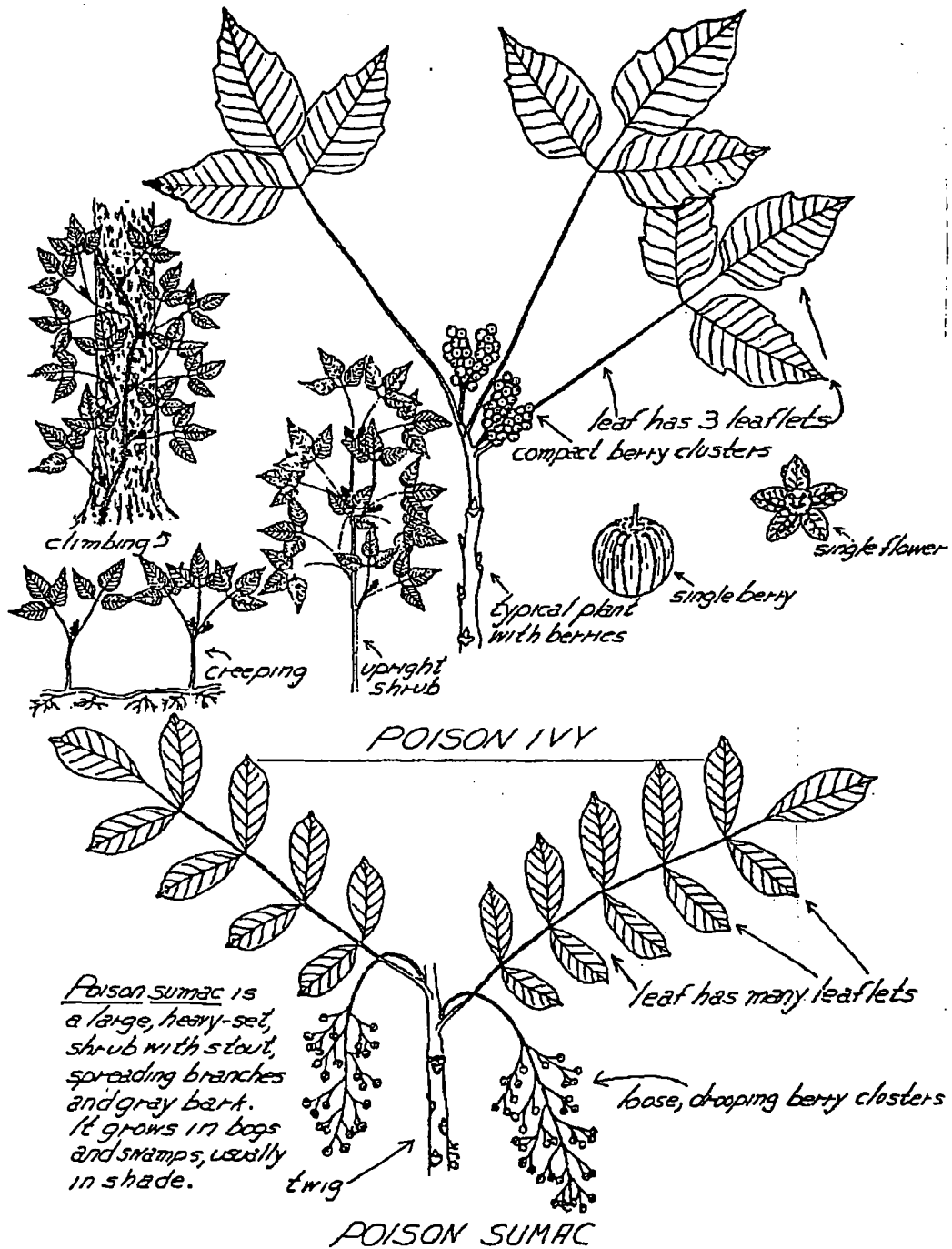
Oconomowoc, WI 53066-3844

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**ATTACHMENT 6**  
**Hazard Control Information**

Figure 2.1 Poisonous Plants





## **HAZARD CONTROL**

### **CHAPTER 4 • Page 8**

#### ***Training***

In order for any of the above techniques to be effective it is necessary to understand the objectives and principles behind each control technique. If everyone understands the principles behind established engineering controls and the direct effect that these controls have on their own health and safety the controls will be more effective.

Most RR Program employees will receive either the OSHA 40 or 24 hour health and safety training. These training courses both offer information on all aspects of the AREC Model. It is recommended that the required annual 8 hour refresher courses also contain this information so that employees may stay familiar with these important topics.

## **HAZARD CONTROL EFFECTIVENESS**

### ***Prevention and Control of Physical Hazards***

#### ***Noise Control***

In general there are three ways to control exposure to noise.

- control the noise at the source
- control along the path to the workers
- control by using personal protective equipment

Control at the source can be achieved by:

- substitution — replace the noisy process or part
- isolate the source — build an enclosure
- control the source — mount the machine or process on material that will reduce vibration and noise

**NOTE:** A NIOSH study showed that 50% of workers using ear plugs received less than 50% of the potential protection demonstrated in the laboratory studies. Most effective in high noise areas is a combination of earplugs and well-fitted ear muffs.

Permanent hearing loss is preventable with the reduction of work place noise levels to below 85 dBA average for an 8-hour day and continued use of proper hearing protection. Generally, it is not feasible for RR staff to measure noise levels during these work activities. For this reason, a conservative, common sense approach to hearing protection and conservation is recommended. Noise monitoring can be performed by the Department's Industrial Hygienist whenever noise level exposures are expected to be between 80 dBA and 130 dBA.

As part of the baseline physical exam for employees, audiometric exams are frequently included. These audiometric exams will be included in the periodic monitoring of the employee, if warranted. These hearing tests will be conducted at no cost to the employee.

Hearing conservation is frequently a part of the OSHA 40-hour or 24-hour health and safety training. It is recommended that this topic be covered for all affected Section staff during

their annual 8-hour health and safety refresher course. Hearing conservation training can be conducted in-house by the Department's Industrial Hygienist.

The principle goal of the Hearing Conservation Program is to eliminate harmful noise. Some of the things that RR staff can do to accomplish this goal are:

- Modify noise source(s) (i.e., sound insulation)
- Limit the employee's exposure with the use of protective equipment
- Increase the distance between the noise source and the employee
- Replace old equipment with quieter equipment
- Maintain equipment according to manufacturer's recommendations
- Alter work schedule to allow for limited time exposure.

### ***Preventing or Controlling Heat Stress***

There are precautions that RR staff can take to prevent heat stress.

#### **Acclimatization:**

Get used to the heat gradually. When the warmer weather starts, gradually increase the amount of time you spend doing strenuous activities in the heat and humidity.

#### **Safe work practices:**

Follow a common sense schedule of work periods and rest periods as indicated below. Staff may also alternate heavier duties with lighter ones. Use the buddy system during field endeavors and report any symptoms to your partner. Cooling vests, if available, may also be utilized,

#### **Heat stress monitoring:**

It is also wise to monitor pulse rates, body temperatures, or weight loss during rest periods. These may indicate early warning signs of heat disorders. For monitoring the body's recuperative ability to excess heat, any of the following techniques should be used. It is a good idea to monitor personnel wearing personal protective clothing when the ambient temperature is around 70°F or above. The frequency of monitoring should increase as the temperature increases or if slow recovery rates are indicated. When temperatures exceed 80°F staff should be monitored for heat stress every work period.

1. Heart rate (HR) should be measured by the radial pulse for 30 seconds as early in the rest period as possible. The HR at the beginning of the rest period should not exceed 110 beats per minute. If the HR is higher, the next work period should be shortened by 10 minutes (or 33%), while the length of the rest period stays the same. If the HR is 100 beats per minute, or higher, at the beginning of the next rest period, the following work cycle should be shortened by 33%.
2. Body temperature should be measured orally with a clinical thermometer (or forehead strip thermometer) as early in the rest period as possible. Oral temperature (OT) at the beginning of the rest period should not exceed 99°F. If it does, the next work period should be shortened by 10 minutes (or 33%), while the length of the rest period stays the same. However, if the OT exceeds 99.7°F at the beginning of the next rest period, the following work period should be shortened by 33%. OT should be measured again at the

## **HAZARD CONTROL**

### **CHAPTER 4 • Page 10**

end of the rest period to make sure that it has dropped below 99°F. It may not be practical to use an oral thermometer during field endeavors, however, forehead strip thermometers can be used instead.

3. Monitoring body fluids lost by weighing staff before and after work periods is not practical for most field teams. Nevertheless, the general rule is that an individual should not lose more than 1½ – 2% of their body weight.

#### **Food and liquid intake:**

Eat lightly when performing strenuous activities during the warmer season. Hot, heavy meals increase the body's temperature. They also redirect the blood flow to the digestive system instead of to the skin's surface for cooling. Drink plenty of fluids. Water is fine most of the time, but if there is profuse sweating, it may be necessary to provide a 1% saline solution or a commercially available "sports drink" to replenish electrolytes. Staff must be aware at all times that eating and drinking in exclusion zones (areas of potential contamination) is forbidden. It will be necessary for field workers to, at least, partially doff personal protective equipment (gloves) and decontaminate the hands and face appropriately before taking food or drink. In order to supplement fluids, alcohol should be avoided since alcohol dehydrates the body.

**Staff should report any signs of minor or major heat stress to their supervisor immediately. Medical attention is necessary for heat exhaustion or heat stroke.**

An Occupational Accident/Illness Report should also be completed for Worker's Compensation coverage, if warranted.

### ***Prevention and Control of Biological Hazards***

#### ***Poisonous Plants***

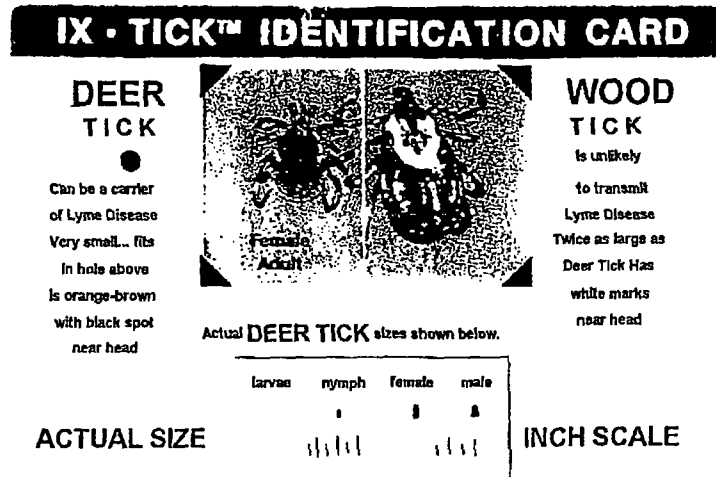
First aid treatment starts with the removal of the contaminated clothing. All exposed skin areas should be washed thoroughly with soap (alkaline laundry soaps are best) and water followed by rubbing alcohol. Calamine lotion or another soothing skin lotion may be applied if a mild rash develops.

A severe rash is characterized by redness, blisters, swelling, and intense burning and itching. The individual may also develop a high fever and may become very ill. Medical help should be obtained if a severe reaction occurs or if there is a known history of previous sensitivity.

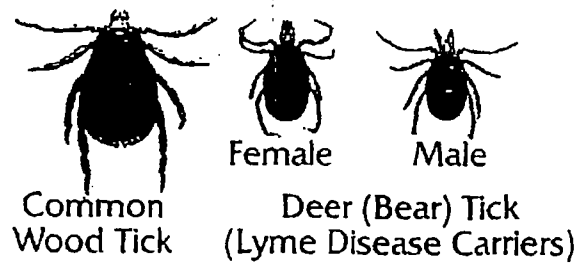
According to the Department's Manual Code 9187.2, if field crews expect to be working in areas where poison ivy or poison sumac are known to thrive, supervisors, at state expense, may purchase, through normal purchasing procedures, a supply of calamine lotion, poison ivy cream and rubbing alcohol to be used for first aid treatment. Staff are encouraged to store and use these products in such a way as to not contaminate environmental samples.

If an employee has been in contact with poison ivy or poison sumac and shows signs and symptoms of a reaction, the individual should inform the supervisor.

Figure 2.3 Ticks



**LYME DISEASE TICK ID CARD**  
(3 X's Life Size)



## HAZARD CONTROL

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4. Walk in the center of mowed or cleared trails to avoid brushing up against vegetation.
5. After field work, conduct thorough tick searches on yourself, with the help of a coworker if necessary. Ticks do not fly or jump onto their hosts. They wait atop grasses and other vegetation until an animal brushes against them. Then they cling to skin, fur, or clothing and will crawl for a time on the host before they embed and feed. Ticks can also remain on deer and other mammals through the colder fall and winter months. Ticks must be embedded and engorged (not flat) before they transmit bacteria. It is important to remove any ticks as soon as possible to prevent infection.

#### Removing Ticks

The mouthparts of a tick are shaped like tiny barbs. The best way to remove a tick is to grasp it with tweezers as close to the skin as possible and gently, but firmly, pull it straight out. If tweezers aren't available, grasp the tick with a piece of tissue. Do not twist or jerk the tick because the head may remain embedded, which can lead to general infection at the bite site. If the head or mouthparts do break off, consult a doctor as soon as possible for removing them. Next, wash the bite site and your hands with soap and water and apply an antiseptic to the bite site.

#### Reporting Work-Related Tick Bites

It is important for RR Program staff to report all tick bites that occur as a result of field work activities for Worker's Compensation coverage. Examples of when to report are given below.

**Example** — A deer tick is attached to your skin requiring the need to tug at it in order to remove it, but no professional medical assistance is required: **you need to report this initial incident.** If this situation reoccurs through deer tick season and again no professional medical assistance is needed, there is no need to fill out an additional worker's compensation report. Should future symptoms of Lyme disease develop, a physician would not be able to determine which deer tick infected you. You should however have a report of deer tick exposure on file.

**Example** — A deer tick that is attached or embedded to your skin and needs to be removed by a medical professional: **an accident report is required.** No medical bills can be paid without an accident report on file. This starts an active worker's compensation claim because there is medical care and treatment with associated costs.

Please remember that the preceding information only applies to deer ticks. You need not fill out an accident report if you are exposed to wood ticks unless the wood tick is embedded and needs to be removed by a medical professional.

The following summarizes the general conditions under which the testing for and treatment of Lyme disease will be covered by Worker's Compensation.

Employees must report a suspected job-related exposure to Lyme disease or ehrlichiosis to their immediate supervisor. The alleged exposure is to be reported on the Employee Occupational Injury and Illness Report (DOA-6058/WC-12) workers compensation form: